



3.19 Communicable diseases

Communicable diseases are caused by infectious agents and can be passed from one person or animal to another. Transmission can occur directly (through contact with bodily discharge), indirectly (for example, by sharing a drinking glass) or by vectors (such as mosquitoes). These diseases are caused by bacteria, viruses, parasites or fungi or their toxic products. Examples include malaria, influenza and chicken pox.

Throughout the 1900s, improved sanitation and new prevention and treatment options drastically reduced the burden of communicable diseases. Vaccination is a key preventative measure and has been highly successful in reducing infections from serious diseases such as polio and measles (see chapters 7.1 'Health promotion'; 7.2 'Immisation and vaccination').

Although the total burden of communicable diseases in Australia is relatively small (1.6%), they are an important cause of ill health. Many have the potential to cause serious illness and outbreaks. Some have developed resistance to antimicrobial agents, increasing the risk of more lengthy and complex treatment and poor outcomes (ACSQHC 2017).

How common are communicable diseases?

Most people will experience an infection with a communicable disease during their lifetime—for example, a common cold or a stomach bug. Mostly, the illness is mild and short lived and medical care is not needed or sought. The prevalence of many communicable diseases is therefore difficult to determine. However, certain diseases have to be reported to health authorities (Box 3.19.1); this requirement ensures that a consistent and comparable data set is collected over time, providing information about who is affected.

Box 3.19.1: Notifiable diseases

Notifiable diseases are a subset of communicable diseases. Legislation requires that each detected case is reported to state and territory health departments. Notification means that trends in the number and characteristics of cases can be monitored over time and outbreaks can be detected promptly. This enables interventions to be implemented to prevent or reduce transmission. Monitoring, analysis and reporting on notifiable diseases occurs nationally via the National Notifiable Disease Surveillance System (NNDSS).

More than 500,000 cases of notifiable diseases were reported to the NNDSS in 2017. The most commonly notified diseases were:

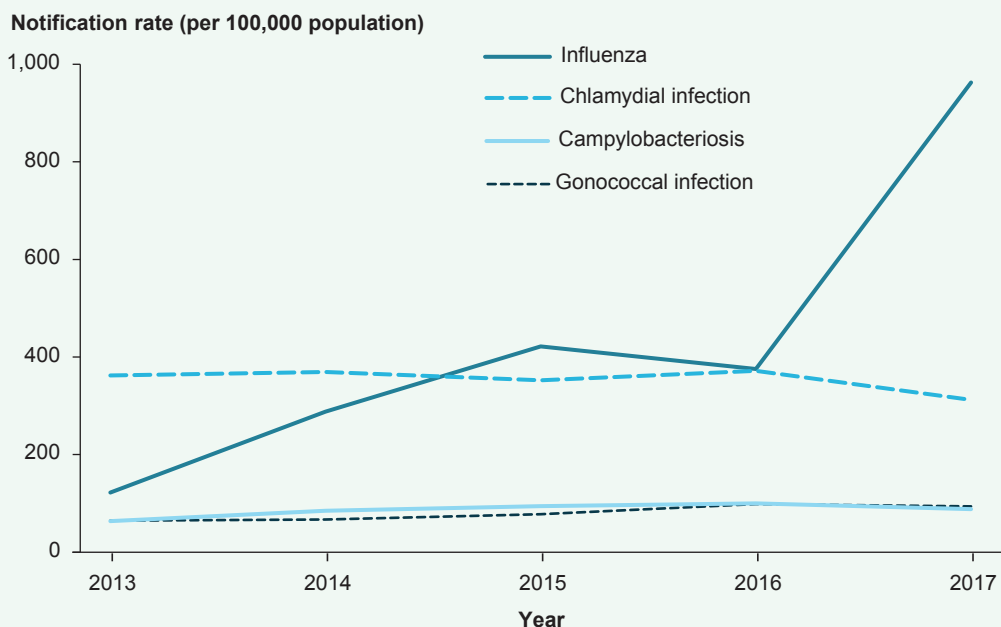
- laboratory-confirmed influenza (a respiratory infection) (around 250,000 notifications)
- chlamydial infection (a sexually transmitted infection) (around 96,700 notifications)
- gonococcal infection (a sexually transmitted infection, also called gonorrhoea) (around 28,400 notifications)
- campylobacteriosis (a gastrointestinal infection) (around 26,700 notifications) (Figure 3.19.1).



In 2017, influenza activity in Australia was high, although it varied between states and territories. Overall, the reported numbers of notifications, people seeking care at primary care providers and hospitals, and hospital admissions were the most since the 2009 pandemic year. However, the 2017 season was not characterised by greater severity; both the number of people admitted to intensive care, and the mortality associated with influenza were within the normal range, considering the large number of notified cases and the main type of influenza causing illness (influenza A (H3N2)). It is difficult to identify specific causes for the high level of influenza activity; however, in eastern states and territories, the season began 1 month earlier and the high point of activity lasted longer compared with patterns for previous years (Department of Health 2017a).

The extent of under-notification and trends in notifications of communicable diseases can change if patients become more likely to seek medical care for infection or screening, if the number of laboratory tests requested by health practitioners increases, or if laboratory tests become more sensitive. For example, it is possible that increased rapid testing contributed, in part, to a dramatic increase in influenza notifications in 2017 compared with 2016 (Department of Health 2017b). The rise in the chlamydia and gonorrhoea notification rate over time was associated with the gradual introduction of more sensitive laboratory tests and an increased number of tests being performed (Kirby Institute 2017; Figure 3.19.1).

Figure 3.19.1: Notification rates for selected notifiable diseases, 2013–2017



Source: Department of Health 2018; Table S3.19.1.



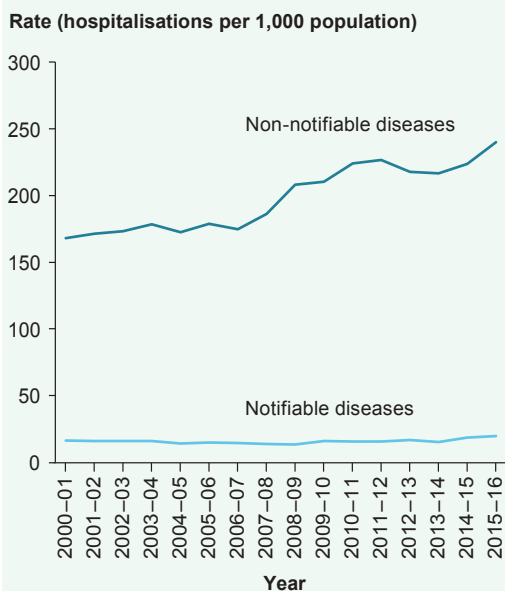


Hospitalisations and deaths

Some people who become infected with communicable diseases end up with a severe infection, resulting in hospitalisation. In 2015–16, 93% of the nearly 400,000 hospitalisations for communicable diseases were for non-notifiable diseases (Supplementary Table S3.19.1). The hospitalisation rate for non-notifiable communicable diseases increased by 43% since 2000–01, to 240 per 1,000 population in 2015–16 (more than 372,000 hospitalisations). The most common diagnosis was lower respiratory tract infections (such as pneumonia and bronchitis), accounting for almost 143,000 hospitalisations (36%) in 2015–16. Of the nearly 28,000 hospitalisations for notifiable diseases, influenza was the most common diagnosis associated with hospitalisation (10,800, 38%). The hospitalisation rate per 1,000 population for notifiable communicable diseases ranged between 13 in 2007–08 and 20 in 2015–16 (Figure 3.19.2a).

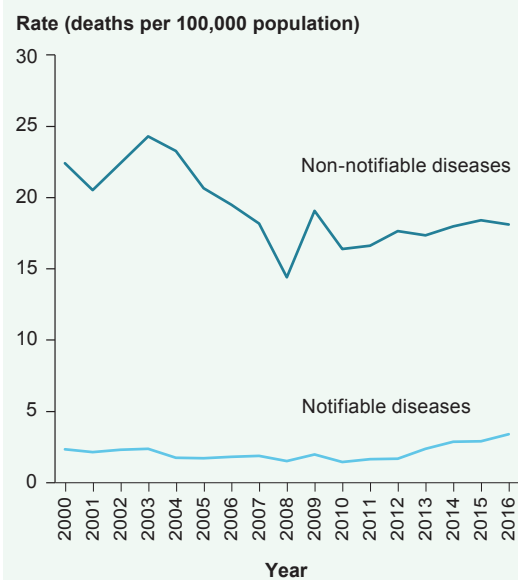
In 2015, slightly more than 6,300 deaths were attributed to communicable diseases. The majority of deaths occurred in people aged over 65 and were caused by non-notifiable lower respiratory infections. The death rate per 100,000 population due to non-notifiable communicable diseases ranged between 14 in 2008 and 24 in 2003 (Figure 3.19.2b). Of the 800 deaths attributed to notifiable diseases between 2000 and 2015, the most common diagnoses were influenza (282) and chronic hepatitis C infection (225).

Figure 3.19.2a: Age-standardised hospitalisations rates for notifiable and non-notifiable communicable diseases, 2000–01 to 2015–16



Source: National Hospital Morbidity Database; Table S3.19.1.

Figure 3.19.2b: Age-standardised mortality rates for notifiable and non-notifiable communicable diseases, 2000–2016



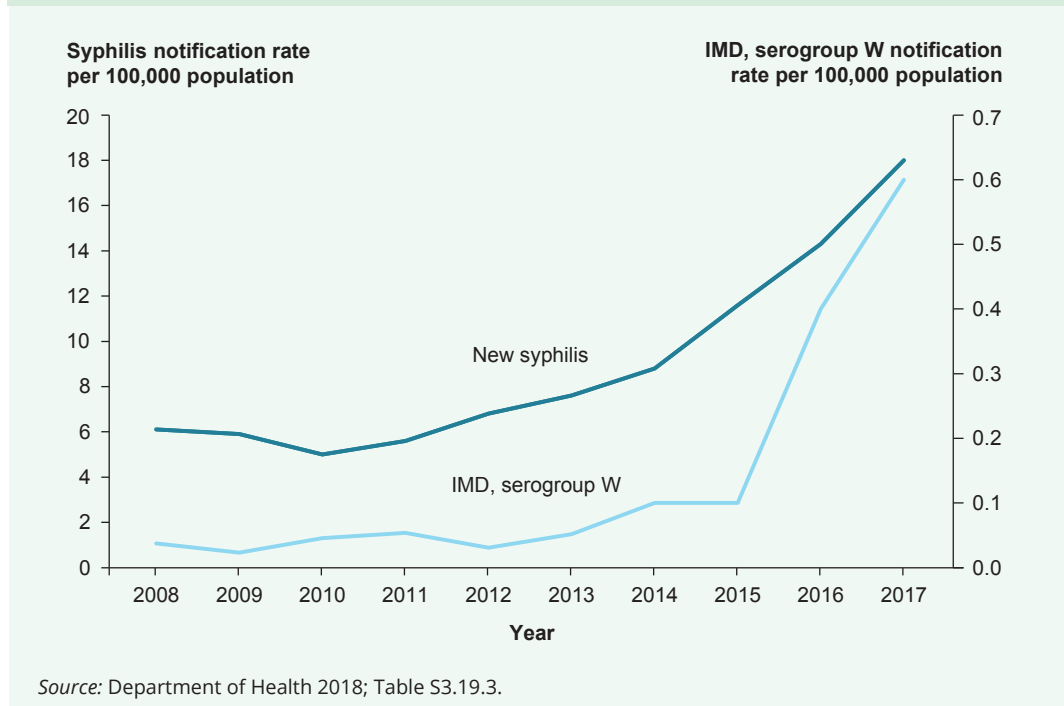
Source: National Mortality Database; Table S3.19.1.



Selected outbreaks of communicable diseases in 2017

The notification system in Australia enables public health authorities to detect outbreaks and increases in communicable diseases. Many outbreaks occur each year—such as widespread seasonal outbreaks of influenza or localised outbreaks of diseases transmitted through, for example, consumption of contaminated food. Of interest because of their severity, ongoing nature, geographic spread and impact on Aboriginal and Torres Strait Islander people are outbreaks of invasive meningococcal disease (IMD) and infectious syphilis, shown for the period 2008–2017 in Figure 3.19.3.

Figure 3.19.3: Notification rates for new syphilis infections and invasive meningococcal disease, serogroup W, 2008–2017



Invasive meningococcal disease, type W

There are five main types of IMD—caused by types ('serogroup') A, B, C, W and Y. A national immunisation program against serogroup C (MenC) was introduced in 2003 in response to an increase in notified cases, particularly among adolescents and young adults. Between 2003 and 2014, the rates of IMD infection declined, with most cases infected with serogroup B. However, in 2014, the number of IMD cases caused by serogroup W (MenW) began to increase, with 17 cases reported. MenW was the predominant cause of IMD in 2016, with 108 cases reported.



Cases are scattered around Australia, but the impact on Indigenous Australians has been comparatively greater (compared with Other Australians), particularly in central Northern Territory. As at 31 December 2017, there were 140 MenW cases reported in 2017; it was the predominant serogroup causing IMD infections. The notification rate in 2017 among Indigenous Australians was 7.0 cases per 100,000, compared with 0.4 cases per 100,000 among other Australians (Department of Health 2017c). Relevant state and territory governments responded to increased cases of MenW by funding targeted vaccination programs in areas affected or linked by cultural and geographical ties, using combination ACWY vaccines.

Syphilis

Syphilis is a sexually transmitted infection. Left untreated, it can irreversibly damage the brain, nerves, eyes, heart, spinal cord and joints, causing serious illness and possibly death. Pregnant women can pass the infection to their baby, increasing the chance of stillbirth. Syphilis can be prevented through safe sexual practices or treated with antibiotics.

Since January 2011, an ongoing outbreak of new syphilis infections has affected Indigenous Australians living in rural and remote areas of northern and central Australia. Around 1,950 cases have been associated with this outbreak (as at 31 January 2018) (Department of Health 2017d), of which around two-thirds were people aged 15–29. Responses to the outbreak have included increased screening, public health alerts, an Indigenous-specific public awareness campaign and active follow-up of cases. In parallel, there have been increases in cases of new syphilis reported in men who have sex with men, predominantly aged 20–39, living in urban areas of Victoria and New South Wales.

What is missing from the picture?

Notifications of notifiable communicable diseases to the NNDSS represent only a portion of all the cases occurring in the community. This is because not all individuals with notifiable diseases present for medical care and, of people who do, not all are tested and/or notified. The proportion of under-reporting may vary between diseases, over time, and across jurisdictions. The number of notifications may be influenced over time by changes in testing practices; for example, by an increased propensity to test and/or to use more sensitive diagnostic tests. These changes may be influenced by both clinician practice and patient expectations. For non-notifiable communicable diseases, the number of cases requiring hospitalisation is a small fraction of the total number of cases occurring in the community. It is difficult to estimate with any certainty what the total number of cases might be.





Where do I go for more information?

More information about the selected outbreaks of communicable diseases in Australia in 2017 can be found here:

- MenW outbreak <www.health.gov.au/internet/main/publishing.nsf/Content/ohp-meningococcal-W.htm>
- syphilis outbreak: <www.health.gov.au/internet/main/publishing.nsf/Content/ohp-infectious-syphilis-outbreak.htm>
- influenza season: <www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm>
- links for further information on other notifiable diseases: <www.health.gov.au/cda>.

References

ACSQHC (Australian Commission on Safety and Quality in health Care) 2017. AURA 2017: second Australian report on antimicrobial use and resistance in human health. Sydney: ACSQHC.

Department of Health 2017a. 2017 influenza season in Australia: a summary from the National Influenza Surveillance Committee. Canberra: Department of Health. Viewed December 2017, <[http://www.health.gov.au/internet/main/publishing.nsf/Content/097F15A91C05FBE7CA2581E20017F09E/\\$File/2017-season-summary-22112017.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/097F15A91C05FBE7CA2581E20017F09E/$File/2017-season-summary-22112017.pdf)>.

Department of Health 2017b. Australian influenza surveillance report. No. 12, 2017, 14–27 October. Canberra: Department of Health. Viewed December 2017, <[http://www.health.gov.au/internet/main/publishing.nsf/Content/8FC4EA9E4C6E3F5CCA2581D4001BBC9A/\\$File/ozflu-surveil-no12-2017.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/8FC4EA9E4C6E3F5CCA2581D4001BBC9A/$File/ozflu-surveil-no12-2017.pdf)>.

Department of Health 2017c. Invasive meningococcal disease: national surveillance report—with a focus on MenW3. December 2017. Canberra: Department of Health. Viewed February 2018, <[http://www.health.gov.au/internet/main/publishing.nsf/Content/5FEABC4B495BDEC1CA25807D001327FA/\\$File/31-Dec17-IMD-Surveillance-report.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/5FEABC4B495BDEC1CA25807D001327FA/$File/31-Dec17-IMD-Surveillance-report.pdf)>.

Department of Health 2017d. Multijurisdictional syphilis outbreak working group (MJSO), meeting communique. 22 February 2018. Canberra: Department of Health. Viewed February 2018, <[http://www.health.gov.au/internet/main/publishing.nsf/Content/71E8A32E7518E532CA25801A0009A217/\\$File/Feb-2018-communique.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/71E8A32E7518E532CA25801A0009A217/$File/Feb-2018-communique.pdf)>.

Department of Health 2018. National notifiable diseases surveillance system, 2018. Canberra: Department of Health. Viewed January 2018, <www.health.gov.au/nndssdata>.

Kirby Institute 2017. HIV, viral hepatitis and sexually transmissible infections in Australia: annual surveillance report 2017. Sydney: Kirby Institute, University of New South Wales.

